W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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In This Issue...

Vol. 20, Issue #6 **$1.50** PUBLISHED TWICE A MONTH **March 15, 1998**

FCC AGREES TO EXAMINE "MICROSTATIONS"

Two Petitions for Rulemaking Filed by Hams Could Legalize "Pirate" Radio!

More than ever, the FCC has its hands full combating unauthorized "pirate" radio stations. But it recently granted a rulemaking number to a petition filed by Nickolaus E. Leggett, N3NL, of Reston, Virginia, seeking to create a "Microstation Radio Broadcasting Service."

If authorized, such a service could eliminate the need for illegal operation. The FCC receives some 13,000 inquiries a year about low-power broadcasting.

Separately, in a recent interview, FCC Chairman William Kennard disclosed that the Commission is looking into just how such a service could be authorized. He publicly conceded some sympathy toward the idea, which is amazing in view of the FCC's longstanding hostility toward unlicensed radio broadcasters.

In the 1980s the FCC authorized a Low Power TV (LPTV) service. Today many small organizations operate their own over-the-air LPTV stations, or so-called "community broadcast stations," especially in rural areas. The FCC used lotteries to grant LPTV licenses.

But past FCC officials fought establishment of a LPFM service after broadcasters complained that there already are too many radio stations.

Nickolaus Leggett hopes to expand availability of the airwaves beyond these limited existing opportunities. "The microstation radio broadcasting service would provide the opportunity for individual citizens and small groups of citizens to operate radio broadcast services," according to N3NL and his co-signers Judith Leggett and attorney Donald Schellhardt. The FCC placed their petition on *Public Notice* on February 5, and granted it number RM-9208.

The petitioners' views are likely to be highly controversial. Their petition will undoubtedly become a target for the ire of incumbent licensees if it makes any headway at the FCC or on Capitol Hill.

The petitioners believe that:

- Microstations can help "energize" small geographic, political or cultural communities.
- Microstations could be "lean enough to endure a series of misfires" and could serve as a "proving ground for potentially popular characters, art forms or ideas that are too experimental to attract much attention from conventional radio stations."
- "Without microstations, and/or similar engines of innovation, much of the nation's creative energy will continue to be concentrated on the Internet while commercial radio remains sluggish and predictable by comparison"

THE W5YI REPORT [Pub. No. 009-311] is published twice monthly by The W5YI Group, Inc., 2000 E. Randol Mill Road # 608-A, Arlington, TX 76011
SUBSCRIPTION RATE: (U.S., Canada and Mexico) One Year (24 issues) $24.50 • Two Years: $45.00 • Three Years: $64.00. • Tel. 817/461-6443
Foreign Subscriptions via Air Mail: $39.50 per year. (Payment may be made by Check, Money Order, VISA or MasterCard payable in U.S. funds.)
Periodicals Postage paid at Arlington, TX. **POSTMASTER:** Send address changes to THE W5YI REPORT, P.O. Box 565101, Dallas, TX 75356

The petition proposes that one AM and one FM channel would be assigned to the entire licensed micro-station service. Each station would be licensed to operate in a specific location. Transmitter output power would be limited to 1W, with antennas limited to 50 feet above ground or building.

Licenses would be granted on a first-come, first-serve basis with random selection to be used "if the Commission is swamped with license applications."

Congress has forbidden the FCC to continue using random selection, or lotteries, to award station licenses, so federal law would probably have to change in order to adopt the Leggett proposal. Without the promise of huge revenues from auctions in the new service, it could be difficult to gain Congressional support.

Asked by *Radio World,* an industry newspaper, for his views on pirate broadcasting, FCC Chairman Kennard pointed out the trend of massive consolidation in the radio industry, with some companies seeking to buy hundreds of stations. This has resulted in fewer opportunities to get into the field, especially for small businesses and minorities, he said.

He said that there is a need to create more outlets for expression, and that he is receptive to hearing more about licensing some form of low- power broadcasting. He has instructed the FCC's Mass Media Bureau to look into whether it is possible to create a low-power radio service.

The FCC already has a "Low Power Radio Service" (LPRS) in the 216-217 MHz band. But the FCC has carefully limited it to certain obscure uses, such as transmissions for the hearing impaired, a broad category of short range "health care assistance devices" and anti-theft beacons. LPRS is legally a form of CB Radio and may not be used for broadcasting to the public. LPRS is not an unlicensed operation, instead devices are "authorized by rule" (i.e. no license documents are issued.)

One journalist has joined the voices calling for a new low-power broadcasting service. Juan Palomo, a newspaper editor in San Marcos, Texas, and a contributor to *USA Today,* recently wrote that "pirates are the good guys" and that a "huge vacuum" in local community service has been filled by an unlicensed microbroadcaster, Kind Radio, in San Marcos.

The FCC has so far left Kind Radio alone, but local officials have tried, unsuccessfully, to close the station down. "If the government fears chaos over the airwaves, it could easily find a way to license and regulate low-power, low-cost stations," Palomo wrote. "The only alternative is to continue to fight its expensive battle to silence these stations, a battle it should know it cannot win."

Another Radioamateur Files Petition for a Low Power Microradio Broadcasting Service

"It is hoped that enactment of the ideas put forth in this petition will allow many of these would-be broadcasters and many of the 'so called pirates' to become legitimate, licensed broadcasters serving their communities by putting the much needed local element back into broadcasting. It will take a strong resolve on the part of the Commissioners to buck the National Association of Broadcasters (NAB) and some existing station owners who will desire to preserve the status quo" (from Petition for Rulemaking filed with FCC by W4FM.)

Rodger Skinner, of Pompano Beach, Florida has also filed a petition with the FCC looking towards creating a Low Power FM broadcasting service. Skinner is president of TRA Communications Consultants, Inc. and also an Extra Class amateur, W4FM. The Commission has accepted the February 20th *Petition for Rulemaking.*

Skinner has worked in broadcasting since 1963 ...actually longer if you count the min-station in his basement at age 16. He started his own consulting business in 1976 after working as a Top-40 DJ and engineer at about a dozen AM/FM radio stations. He now makes his living filing FM and LPTV applications for clients and also owns a low power TV station in Fort Lauderdale, Florida.

There is a good chance that his LPTV station will "go dark." Rodger told us, "Since I will be out of work when the digital TV axe falls on my LPTV station, I have been working on my LPFM petition for almost two years. I have always wanted to own a radio station, but like most I have not been able to afford to buy one. The 100 KW FMs here now are going for $50 million."

He believes that low power FM (LPFM) may be the answer and is proposing two classes of low power FM broadcast stations: LPFM-1 ("primary" for "real" broadcasters) and a LPFM-2 (50-watt "secondary" class for what is now "pirate radio.") A LPFM-3 low power ten day "special event" permit would be available to those who want to cover auto races, boating regattas, and the like.

If adopted, Skinner says his proposal will:

1) Make more efficient use of the FM band without interference.
2) Increase diversity of ownership of stations including "*minority ownership*".
3) Give the listening public more and better listening choices.
4) Provide for affordable radio advertising to small businesses, even in large markets and increase competition.
5) Create jobs nationwide at new stations, equipment manufacturers and suppliers thus spurring the economies of many areas.
6) Help to level the playing field in the broadcast industry by lowering the barrier to entry for radio station ownership;
7) And create a large number of locally owned radio stations that, on the whole, will be more responsive to the needs and issues of the local communities.

Skinner says he is in contact with leaders in the microradio (LPFM) movement and is working diligently to

bring about Low Power FM neighborhood broadcasting. "We need to keep the big companies out of this and save it for us little guys with limited financial resources."

Some of the key points in his petition:

- The purpose is to create a new class of broadcast station to be called Low Power FM (LPFM), which will allow, for the first time, people of limited financial means to have a voice in broadcasting in America."
- LPFM will utilize commercial FM channels 221 (92.1 MHz) through 300 (107.9 MHz) and there should be sufficient channels available to provide one or more new channels to each market area.
- "...the tens of thousands of applications expected for the temporary special-event LPFM-3 stations could be handled by volunteer organizations. There would need to be some type of frequency coordinators so that interference is not caused to existing stations."
- The proposal seeks sufficient power levels to cover areas similar to that covered by a LPTV station, approximately fifteen miles maximum for "primary class" stations. Others will be able to operate "special event" stations with as little as one watt and "secondary class" stations with power levels in between those levels.
- It is important to protect this new service from being usurped by large corporations. Local ownership of these new stations will most likely result in serving the local community. This service is for the small business person and not the large corporations.
- Skinner also believes that the Commission should change its definition of a small business from one having $6 million net worth and less than $2 million in annual profits for each of the two previous years to "...one with a net worth of under $2 million and annual profits of under $500,000.

Skinner says his proposal:

A) Makes more efficient use of the FM band without interference.
B) Increases diversity of ownership of stations including "*minority ownership*".
C) Gives the listening public more and better listening choices.
D) Provides for affordable radio advertising to small businesses, even in large markets.
E) Creates jobs nationwide at new stations, equipment manufacturers and suppliers.

On the 'Pirate Radio' Problem:

"Estimates in the trade press of citizens taking to the airwaves illegally have ranged from hundreds to thousands and the truth is nobody really knows for sure. With the equipment being readily available at low cost there is a danger of 'pirate radio' really getting out of control all across the country. With each Commission high profile bust of a pirate, more pirates seem to spring up, as in retaliation. ...By creating this three tier LPFM service, those serious about getting heard on the airwaves will have an outlet. ...The bulk of the "pirate radio" problem will disappear since they will be happily broadcasting (legally) and providing interesting listening alternatives and much needed localism along the way.

The LPFM Service proposed

Skinner says that four distinct types of Low Power FM service are needed throughout the country. First is for the hobbyist who wishes merely to transmit a signal to another part of his/her house or other needs... This is already adequately provided for under current Part-15 rules, which limit radiation to 250 uV/m at 3 meters from the antenna.

Secondly, there is a need for "special-event" stations to broadcast information concerning a special event for a limited time period. These stations may only need to broadcast for a weekend or a few days related to the event in question. There should be an easy streamlined system to coordinate these one-time requests, where coverage requirements might typically be one to two miles, around a park, racetrack, etc. Skinner refers to these as "LPFM-3 Special Event" permits.

A third type of station is needed to serve very "small communities" or very small areas within larger communities, such as operated today by some so called 'pirates' that typically have a range of under five miles.... Many in this group will prefer to operate with volunteers from the community offering a variety of programs and viewpoints by area residents and offer a loosely structured form of broadcasting, often without set hours of operation... This type of station could be started at little cost. LPFM-2 stations would have a maximum power limit of 50 watts (ERP), a minimum power limit of 1-watt (ERP) and maximum antenna height of 150 feet.

Finally, Skinner believes there is a need for a more structured type of station, again with local owners, who themselves will invest the time and money needed to create a station that will be responsive to local needs and interests. LPFM-1 stations will be the highest class with the largest possible coverage area as well as the most stringent requirements.

This type of station will mirror more closely the typical full-power station, may consist of a few employees in addition to the owner(s) and have a 24-hour per day continuous broadcast schedule. A minimum power level of 50 watts (ERP) and a maximum power level of up to 3 kilowatts (ERP) will provide a coverage area of up to about fifteen miles, similar to the old Class A FM stations

The petition for LPFM is online for reading or downloading from: <httpp://www.concentric.net/~radiotv>. Rodger Skinner's e-mail address is: radiotv@cris.com.

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'Pirate' Broadcaster Again Found Guilty

Says he did not know he needed a license

Last August, a federal court affirmed the seizure of radio equipment used by unlicensed 'pirate' broadcaster Arthur "Lonnie" Kobres, 54 of Lutz, Florida. Kobres had been found broadcasting without a license on 96.7 MHz in late 1995 and early 1996. Saying that the Government's seizure was invalid, Mr. Kobres raised several issues in his defense challenging the FCC's authority to regulate his broadcast operation.

On November 19, 1997,. a large force comprised of U.S. marshals, local sheriff department officials and FCC agents raided Kobres' home in the pre-dawn hours. Once again, Kobres was arrested and his radio equipment seized. Two other Tampa area 'pirate' broadcasters were also raided on the same day and their radio equipment confiscated. Due to the prior 1996 illegal broadcasts, however only Kobres was charged with a criminal offense.

The raids were originated by the FCC, which has made the elimination of unlicensed micropower broadcasting a high priority. They were intended as a warning to the thousands of other broadcasters who have set up similar operations in communities across the country. Micropower broadcasters operate FM radio stations of extremely low power (under 100 watts).

Dubbed "pirates," because the FCC does not license them, their range can cover anywhere from a few blocks to an entire community. Kobres' station, Lutz Community Radio, which he operated from his garage, had a radius of 12 miles.

Kobres was tried in federal court in Tampa. On February 27, was found guilty on all 14 criminal counts of operating a low power FM broadcasting station without an FCC license. Each count represents a specific day that Kobres was monitored by the FCC operating his talk radio station. His broadcasts consisted primarily of retransmitted anti-government programming that he received via satellite. He faces a two-year prison sentence and fines totaling nearly $3 million.

The ongoing FCC war on micropower broadcasters is often cast as a First Amendment issue -- particularly since the FCC refuses to issue licenses to low power broadcasters, thus forcing those interested in serving their communities into the "pirate" role.

Kobres defense was that the FCC overstepped its authority by requiring licenses for radio transmissions that do not leave the state. According to Kobres' attorney, Lowell Becraft of Huntsville, Alabama, until 1982 the FCC was only authorized to regulate interstate and foreign radio communications. "An appeal will be based on that unconstitutional amendment," Becraft said.

Kobres said his operation was authorized by a manual sent him by the FCC in 1970 which said broadcasters needed a license if they transmitted across state lines, to another country or to a ship at sea. He said he was not aware that the Government had changed the statute. The judge rejected Kobres' motion to have the law declared unconstitutional. On the stand, witnesses said the broadcasts interfered with their radio and television reception.

Assistant State Attorney Ron Tenpas said Kobres was "a government protester" who knew very well -- especially in view of his prior offenses -- what the law was, but just didn't like it. "Furthermore, the fact that he was not aware of the change is not, in and of itself, a defense."

The FCC said that "In general, unlicensed radio transmissions create a danger of interference to important authorized radio communications services. Such transmissions using equipment of unknown technical integrity raise particular concern because of the potential for harmful interference to authorized services, including public safety and aircraft frequencies."

In related news, according to the *Tampa Tribune* American Civil Liberties Union lawyers have met with Doug Brewer, *[General Class radioamateur: KC4HAZ]* one of the pirate operators shut down November 19th, to discuss a possible constitutional challenge to FCC regulations regarding low power FM stations. *[See W5YI Report, Dec. 1, 1997, p.4 and Jan. 1, 1998, p.9]*

● **The other half of the world-famous Colvin DX-pedition team, Iris Colvin, W6QL, of Richmond, California, died February 18 at her home.** She was 83. Iris Colvin was first licensed in 1945 as W6DOD. She and her late husband, Lloyd Colvin, W6KG, traveled the world between the 1960s and the early 1990s, operating from more than 100 rare DXCC countries. Lloyd Colvin died in 1993. The couple had been married for 55 years. The Colvins racked up more than a million contacts over the years and amassed one of the largest QSL collections in the world -- more than a half million cards at last count.

● **A ham radio package will be aboard the shuttle flight that carries US Senator and astronaut John Glenn into space this fall.** Word from NASA this week was that the Shuttle Amateur Radio EXperiment (SAREX) payload would be carried on STS-95 when it flies in October carrying the 77-year-old space pioneer into orbit for the first time since the early 1960s, when Glenn became the first US astronaut to orbit the Earth. *[Thanks ARRL]*

Two hams -- US Astronaut Scott Parazynski, KC5RSY, and European Space Agency astronaut Pedro Duque, KC5RGG, of Spain--will be among an international crew aboard STS-95. The launch date for the only other SAREX mission scheduled for 1998 -- STS-93 -- has slipped from August to December. Glenn already has begun his astronaut training, but it's not yet known if he plans to get his ham ticket before his return to space. *[Thanks ARRL]*

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Origin of the 13 word-per-minute Code Speed

Code Proficiency Used to Control Number of Amateurs

Is the Morse Code requirement being used as a filter to keep the number of Amateur Radio Operators low. The answer is, "Yes!" And this has been true since almost the very beginning of licensed ham radio.

In Clinton B. DeSoto's classic book, *Two Hundred Meters and Down, The Story of Amateur Radio* (Published by the American Radio Relay League in 1936) is the following passage on page 179. DeSoto was a highly placed ARRL official at the time his book was written and published, so we assume it represents League thinking.

"The growth of amateur radio and the total number of amateurs will doubtless be controlled in the future. The present condition of the amateur bands, while not intolerable, approaches saturation. ... *[The number of amateurs at the time was 46,000]* DeSoto goes on:

"Obviously no competent person can be denied the right to become an amateur. The only justifiable restrictive procedure is to raise the standards of competency. This has already been done to the point where it is many times more difficult to secure an amateur operator's license than it was ten years ago. **Increasing the code speed requirement is one step in this direction. ...**"

DeSoto goes on to say that additional restrictions are not needed since "The total number of licensed amateur operators has remained relatively constant during the past two years. A slight stiffening of the basic examination, together with the increased code-speed requirement, would accomplish the desired result."

At the 1936 annual ARRL Board Meeting held in West Hartford, CT) the Board "...voted to ask [the] FCC to raise the code speed requirement on license exams to 12.5 wpm.. *[From Official Broadcast 671, May 10, 1936]*

A letter was then sent by Mr. K. B. Warner, ARRL General Manager, to the FCC requesting a code speed increase from 10 to 12½ words per minute. Here are some quotes from Warner's letter:

"It has become desirable to raise the general standard of qualification for an amateur operator license. Observations show that too many licensed amateurs do not possess the qualifications presupposed by the regulations. **Considering that the written part of the examination may be mastered with relative ease, the chief opportunity for a better selective process resides with the code examination. ...**" *[That is pretty clear!]*

"A general raising of the standards could help to confine the obviously limited facilities of amateur radio to those who have at least nominal aptitude for the same. It seems indicated that this situation could be best treated by an increase in the code speed. Consequently the League now requests the Commission to increase the code speed required in the amateur examination from ten words per minute to twelve and one-half words per minute."

The FCC's Assistant Chief Engineer, E. K. Jett responded to the ARRL request on May 28, 1936:

"For a number of years it has been the practice to require all applicants for amateur radio operator licenses to prove their ability to transmit and receive texts in the International Morse Code at a minimum rate of 10 words per minute. The International Regulations do not specify any rate of speed but states that any person operating the apparatus must have proved that he is able to transmit and receive texts so transmitted.

"An operator whose top speed is not more than 12½ words per minute would be classed as a poor operator. A good operator is one who can transmit and receive at the rate of 25 or 30 words per minute. Therefore it would appear that the request is not unreasonable and that it would be in the best interest of amateur radio to increase the speed slightly. However, it is believed that it would be awkward to conduct tests where there is a fraction of a word and for this reason, it is recommended that the speed be rounded off to 13 words per minute."

"RECOMMENDATION: It is recommended that paragraph "a" of Rule 404 be modified to read as follows:

'a. Applicant's ability to send and receive in plain language messages in the International Morse Code (five characters per word) at a minimum speed of 13 words per minute.'"

On June 3, 1936, the Commission approved the increase of the 10 wpm code speed to 13.

In that same letter, the ARRL complained (as it has for more than fifty years) that the Amateur Radio Service required more effective FCC monitoring of Amateur Radio. E. K. Jett's response:

"The same request has been submitted to the Commission after each annual meeting of the Board of Directors and action has been taken by the Commission resulting in some improvement in amateur transmissions. ... It is believed that the amateurs themselves should do a certain amount of policing of the amateur bands and should report one another in order to improve operating conditions within their bands. The work cannot be efficiently performed by the Field Force unless additional inspectors are employed. It is not believed, however, that the Commission's appropriations will permit an expansion of our present force, or of the schedule of work in the field during the next fiscal year." *[The League's Official Observer program actually began 10 years before E. K. Jett made the suggestion. By the way, Jett later went on to become an FCC Commissioner.]*

The letters that we mention were researched by (and obtained from) a Civilian Records Archivist at the National Archives, Washington, DC.

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Federal Court Enjoins Radioamateur from Causing Malicious Repeater Interference

Action bypasses State Courts and FCC

A novel approach to stopping amateur radio operators from intentionally interfering with amateur radio communications has initially been successful in Baton Rouge, Louisiana.

In a lawsuit brought by the Dow Amateur Radio Club, Inc. (DARC), Judge Polozola of the U.S. District Court for the Middle District of Louisiana has issued a Temporary Restraining Order (TRO) enjoining Walter K. Guillot (WB5JLZ) from linking the repeaters of the DARC and its members, from intentionally interfering with their radio communications and from using the repeaters of the DARC and its members.

In recent years, the Federal Communications Commission (FCC) has placed a very low priority on bring enforcement actions against amateur radio operators who violate the regulations.

In those few cases where the FCC has taken enforcement action against intentional interference by amateurs, it has been years before the interference is stopped. Consequently, a few lawsuits have been filed in state courts by the injured parties seeking injunctive relief based on state law. However, these suits have usually been unsuccessful, because the courts hold that the authority of the Federal Communications Commission preempts state law concerning radio interference.

The federal preemption defense has not always caused the dismissal of state court lawsuits seeking to stop radio interference. After obtaining an interpretation from the FCC that the owner of a repeater could lawfully deny amateurs, who were violating the regulations, the right to use the repeater, Sid Radus (N6OMS) successfully obtained state court injunctions against amateur radio operators who used the Clairmont Amateur Radio Association (CLARA) repeater without permission.

The DARC lawsuit uses the legal argument developed by Sid Radus, but goes farther to avoid the argument that the FCC is the only remedy. Relying on a precedent from the U.S. Court of Appeals for the Fifth Circuit, the DARC is arguing it has a private right of action under the Federal Communications Act *(47 U.S.C. §401(b))* to enjoin violations of the amateur radio regulations. Moreover, the lawsuit is filed in federal court, rather than state court. The state law claims are also included in the lawsuit.

The FCC regulations which Guillot allegedly violated include:

- No amateur operator shall willfully or maliciously interfere with or cause interference to any radio communication or signal. *47 CFR 97.§101(d).*
- In all respects not specifically covered by FCC rules each amateur station must be operated in accordance with ...good amateur practice. *47 CFR 97.§101(a).*
- No amateur station, except an auxiliary, repeater or space station, may automatically retransmit the radio signals of other amateur stations. *47 CFR 97.§113(f).*
- Where the transmission of a repeater cause harmful interference to another repeater, the two station licensees are equally and fully responsible for resolving the interference unless the operation of one station is recommended by a frequency coordinator and the operation of the other station is not. In that case, the licensee of the non-coordinated repeater has primary responsibility to resolve the interference. *47 CFR §97.205(c)*

While continuing to assert that his actions were lawful, Guillot stopped linking the DARC repeater after receiving a copy of the DARC's lawsuit. For three months previously, Guillot had used a crossband radio located at his residence in Baton Rouge to link the DARC repeater (147.345+) with a repeater owned by a member of the DARC. This caused a signal to "ping-pong" between the linked repeaters and made both repeaters unavailable for routine and emergency communications.

"Based on the legal precedents, it appears the arguments in the DARC lawsuit could be used to stop intentional interference by amateurs in most of the country," said John Gray, the lawyer representing the DARC.

One unfortunate aspect of the DARC litigation was that the American Radio Relay League (ARRL) declined to support the effort by submitting an affidavit concerning the inadequacy of enforcement by the FCC in such cases The ARRL's reason for refusing to participate was that it was concerned the court might hold that state law was applicable even in cases of unintentional interference caused by amateur operators. So far, that concern has not materialized. Further details on this lawsuit will be provided as they develop.

- **On the next page you will find a census of FCC licensed Radioamateurs** that is a little different than those we have previously published. The FCC Amateur Service database contains all amateurs - including those in the 2 year grace period. In effect, the FCC considers amateurs to be licensed for a 12 year period. A license expires after 10 years, but remains in the Amateur Service data base for an additional 2 years in the event an amateur wishes to reinstate his/her call sign and station/operator license without examination.

We have formatted two reports using the FCC data base as it stood on February 1, 1998. The following page shows the total number of current amateurs by license class and state (mailing address) whose licenses have not expired (10 Year). The second figure (12 Year) includes unexpired licensees plus those expired licenses in the two year "grace" period. Bottom line: The station/operator license has expired on about 6% (or 43,479) of all amateurs in the FCC's Amateur data base.

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March 15, 1998

AMATEUR SERVICE CENSUS - February 1, 1998 - 10 Year Licenses & 12 Years - Includes 2 year grace period)

State	Extra		Advanced		General		Tech. Plus		Technician		Novice		TOTALS		
	10Y	12y	10Y	12Y	10Y	12Y	10Y	12Y	10Y	12Y	10Y	12Y	10Y	12Y	2Y
AK	340	347	488	508	573	615	517	565	959	959	281	344	3158	3338	1809
AL	1168	1200	1587	1685	1645	1773	2104	2295	3274	3274	603	762	10381	10989	608
AR	778	796	996	1054	984	1058	1256	1336	2220	2220	422	509	6656	6973	317
AZ	1602	1638	2414	2567	2447	2653	2873	3096	4688	4688	834	1018	14858	15660	802
CA	8763	9065	14186	15234	14309	15637	21305	22917	33148	33148	12088	14328	103799	110329	6530
CO	1298	1328	2005	2106	1931	2084	2316	2454	3070	3070	861	1068	11481	12110	629
CT	1109	1142	1382	1455	1666	1808	1696	1810	1657	1657	1146	1368	8656	9240	584
DC	68	72	82	89	106	121	67	68	70	70	47	57	440	477	37
DE	199	207	221	233	264	282	309	335	302	302	120	158	1415	1517	139
FL	4500	4654	7265	7868	8487	9212	7669	8329	8189	8189	4511	5619	40621	43871	3250
GA	1632	1664	2432	2552	2405	2591	3029	3265	3774	3774	1036	1229	14308	15075	767
HI	338	351	455	490	491	539	610	693	770	770	389	570	3053	3413	360
IA	764	779	1296	1385	1286	1399	1165	1233	1393	1393	622	876	6526	7065	539
ID	362	374	578	605	677	724	764	804	1366	1366	261	317	4008	4190	182
IL	2629	2721	3722	3967	4139	4513	4655	5022	5518	5518	2215	2794	22878	24535	1657
IN	1526	1566	2196	2326	2525	2721	3346	3571	3918	3918	1384	1649	14895	15751	856
KS	750	765	1070	1139	1382	1505	1438	1533	1966	1966	649	814	7255	7722	467
KY	949	966	1153	1219	1354	1434	1761	1864	2691	2691	842	995	8750	9169	419
LA	833	862	1220	1300	1203	1308	1345	1456	1799	1799	595	718	6995	7443	448
MA	2073	2121	2381	2570	2878	3149	3038	3292	2919	2919	1592	1917	14881	15968	1087
MD	1504	1542	2066	2177	1994	2137	2272	2408	2523	2523	985	1216	11344	12003	659
ME	514	523	653	691	914	1000	811	849	1055	1055	379	447	4326	4565	239
MI	2321	2362	3329	3529	3787	4109	4255	4524	5348	5348	1611	2014	20651	21886	1235
MN	1215	1233	1859	1965	2025	2186	2054	2163	2513	2513	798	1012	10464	11072	608
MO	1478	1518	2030	2169	2335	2533	2339	2501	3336	3336	950	1197	12468	13254	786
MS	519	5450	773	826	771	827	834	903	1383	1383	363	442	4643	4921	278
MT	326	337	455	472	529	575	529	541	886	886	235	290	2960	3101	141
NC	2015	2054	2796	2924	2890	3090	3458	3654	5021	5021	1576	1825	17756	18568	812
ND	156	159	228	241	322	356	326	346	413	413	133	186	1578	1701	123
NE	403	412	703	741	848	918	780	817	835	835	325	383	3894	4106	212
NH	701	712	705	742	863	931	1022	1069	1140	1140	415	479	4846	5073	227
NJ	2181	2261	2800	3031	2999	3273	3451	3690	3156	3156	1743	2175	16330	17586	1256
NM	601	620	887	930	791	856	876	945	1686	1686	235	285	5076	5322	246
NV	454	469	679	714	795	851	815	871	1290	1290	251	311	4284	4506	222
NY	3769	3894	5093	5459	5867	6396	6800	7291	7946	7946	4184	5219	33659	36205	2546
OH	3255	3325	4530	4791	4981	5395	7206	7704	7882	7882	2686	3308	30540	32405	1865
OK	963	985	1369	1476	1313	1420	1742	1919	2877	2877	676	879	8940	9556	616
OR	1301	1344	1995	2140	2447	2650	2531	2702	3265	3265	988	1220	12527	13321	794
PA	3086	3176	4052	4322	4608	5966	5143	5429	5177	5177	2234	2770	24300	25840	1540
PR	297	304	541	583	736	810	1990	2370	899	899	2730	3651	7193	8617	1424
RI	344	354	321	354	456	502	574	615	442	442	264	344	2401	2611	210
SC	767	782	1048	1104	1268	1351	1350	1424	1664	1664	470	556	6567	6881	314
SD	187	188	279	307	327	353	268	286	355	355	115	146	1531	1635	104
TN	1574	1613	2192	2321	2137	2296	3011	3242	3768	3768	960	1175	13642	14415	773
TX	4892	5041	7070	7460	6864	7479	8117	8807	11155	11155	2732	3482	40830	43424	2594
UT	518	525	791	830	734	767	1651	1741	3572	3572	457	621	7723	8056	333
VA	2139	2200	2888	3035	2824	3019	3361	3536	3979	3979	1370	1671	16561	17440	879
VI	51	52	46	50	73	75	53	57	80	80	23	35	326	349	23
VT	265	271	306	321	395	423	406	420	632	632	166	189	2170	2256	86
WA	2479	2546	3538	3738	4062	4393	4918	5221	6804	6804	1919	2474	23720	25176	1456
WI	1204	1231	1735	1829	1919	2079	1932	2047	2771	2771	807	1009	10368	10966	598
WV	621	636	696	727	900	950	1233	1291	2242	2242	503	624	6195	6470	275
WY	187	193	214	226	271	288	286	307	484	484	100	161	1542	1659	117
Other	186	186	147	149	189	195	251	260	659	659	91	140	1523	1589	66
Total:	**74153**		**105943**		**114986**		**137908**		**180929**		**63972**		**677891**		
%	**10.9%**		**15.6%**		**17.0%**		**20.3%**		**26.7%**		**9.5%**				**43479**
Total:		**76205**		**112727**		**124575**		**147888**		**180929**		**79046**		**721370**	
% of Total:		**10.6%**		**15.6%**		**17.3%**		**20.5%**		**25.1%**		**10.9%**			

AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of March 1998:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0HH	KI0LX	(***)	KC0CVE
1 (*)	AA1TI	KE1JG	(***)	KB1CKZ
2 (*)	AB2EZ	KG2NS	(***)	KC2DBN
3 (*)	AA3QV	KF3AZ	(***)	KB3CEG
4 (*)	AF4IJ	KU4PD	(***)	KF4WDR
5 (*)	AC5PB	KM5PI	(***)	KD5DLI
6 (*)	AD6EP	KQ6UT	(***)	KF6PPO
7 (*)	AB7XK	KK7MI	(***)	KD7ATF
8 (*)	AB8BY	KI8FE	(***)	KC8JJT
9 (*)	AA9VN	KG9MS	(***)	KB9SFI
N. Mariana	NH0B	AH0AY	KH0GV	WH0ABF
Guam	(**)	AH2DF	KH2TG	WH2ANV
Hawaii	AH7Y	AH6PF	KH7IQ	WH6DEN
Am.Samoa	AH8P	AH8AH	KH8DX	WH8ABF
Alaska	AL0J	AL7RA	KL0NM	WL7CUR
Virgin Isl.	(**)	KP2CN	NP2JZ	WP2AIJ
Puerto Rico	NP3V	KP3BE	NP3UK	WP4NNQ

* = All 1-by-2 & 2-by-1 call signs have been assigned.
** = All 2-by-1 call signs have been assigned.
***= Group "C" (N-by-3) call signs have now run out in all districts. Group D 2x3 call signs are now being assigned.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3), Hawaii (AH7/KH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

NEW AND UPGRADING AMATEUR STATISTICS

For the Month of February 1996, 1997 & 1998

License Class	New Amateurs 1996	1997	1998	Upgrading Amateurs 1996	1997	1998
Novice	76	100	54	0	0	0
Technician	1885	1955	943	0	1	39
Tech Plus	155	200	122	418	399	264
General	14	29	27	394	354	253
Advanced	4	7	1	313	294	209
Extra Class	7	11	3	240	231	109
Club/Empty	98	101	292	0	0	20
Total:	**2239**	**2403**	**1442**	**1365**	**1279**	**903**
Decrease:		**+7.3%**	**(40.0%)**		**(6.3%)**	**(29.2%)**

We are a little confused about the 292/20 Club Call Signs issued During February. It certainly is not possible for a Club to upgrade! This is the information we got, however, when we ran the February 1998 report on new and upgraded amateur radio licenses.

The FCC's license issuing computer was "down" about 10 days during February and this may have something to do with why there were substantially less new and upgrade licenses issued during the month.

Not Coming to Your Neighborhood: Microsoft Van 98

Researchers at Cambridge University, grateful for a $20 million donation from Microsoft CEO Bill Gates, have discovered technology that could aid in finding illegal copies of software - by remote monitoring and analysis of the radiofrequency (RF) leakage from users' computers.

But Microsoft doesn't want to use the technology. So the researchers also disclosed ways of beating spooks who may monitor the RF.

This technique is code-named "Tempest" in the "intelligence community" (the collection of spook agencies including CIA and NSA). Heavily shielded, Tempest-qualified PC hardware is a big business for vendors to the government.

A related technique is used by British authorities, who drive receiver vans around neighborhoods, aiming antennas at weak RF emanations from TV sets. British citizens must pay annual license fees for TV sets. Watching TV without a license is a criminal offense; every day some 1000 "dodgers" are nabbed. The license fees fund the British Broadcasting Corp. (BBC).

(The widely resented TV detector vans were even parodied by Monty Python's Flying Circus, in a skit about a Cat Detector Van. "Never saw so many bleedin' aerials!" one cat owner exclaimed.)

Microsoft asked for the research but apparently will look elsewhere for software copyright protection. "The design goal we set ourselves was a technology that would enable software vendors to catch the medium-sized offender - the dodgy freight company that runs 70 copies of [Microsoft] Office 97 but only paid for one - while being ineffective against private individuals," according to researcher Ross Anderson, answering questions in an information policy mailing list on the Internet.

"We offered Bill G. the prospect that instead of Word radiating the text you're working on to every spook on the block, it would only radiate a one-way function of its license serial number."

This was a good compromise between software protection and privacy, Anderson suggested, but Microsoft turned down the offer. Instead, the company is interested in other methods that would prevent any form of software copying, he explained.

The researchers were quick to point out that their work did more than demonstrate how Tempest could be applied to software protection. They also found that:

- Malicious software could "encode stolen information

in the machine's Tempest emanations and optimize them for some combination of reception range, receiver cost and covertness;" and

- Special fonts could reduce or prevent spies from gaining useful information from computer RF radiation.

"In the old days, Tempest was about expensive hardware - custom equipment to monitor the enemy's emissions and very tricky shielding to stop him doing the same to you. It was all classified and strictly off-limits to the open research community," Anderson said. But he believes that research has ended that era.

"You can now use software to cause the eavesdropper in the van outside your house to see a completely different image from the one that you see on your screen. In its simplest form, our technique uses specially designed Tempest fonts to make the text on your screen invisible to the spooks."

The Cambridge paper, "Soft Tempest: Hidden Data Transmission Using Electromagnetic Emanations," is available on the Internet at:
http://www.cl.cam.ac.uk/~mgk25/ih98-tempest.pdf.
Information about British TV Licensing detection is available at: **http://www.tvlicensing.co.uk/,**
while the Anti-TV License site is at:
http://www.geocities.com/TelevisionCity/Set/4242/.

FCC Sides With Homeowner in DBS Antenna Dispute

The FCC has prohibited a homeowners association from restricting Direct Broadcast Satellite (DBS) antennas. It found that such restrictions contravene Rule 1.4000, "which prohibits governmental and private restrictions that impair the ability of antenna users to install, maintain, or use over-the-air reception devices."

The Commission took this action at the request of Jason Peterson of Geneva, Illinois. Mr. Peterson complained to the FCC that the Chesapeake Commons Homeowners Association told him that installing an 18-inch DBS satellite dish on his townhouse is prohibited.

Mr. Peterson owns and has exclusive use of the roof and three of the exterior walls of the townhouse.

The association told him if he installed the antenna, the association would remove it and bill him for the expense. The only way he could receive broadcast programming, he was told, was with cable TV. The association did not file any reply to his petition.

In its Feb. 4 *Memorandum Opinion and Order,* the FCC observed that Congress required the FCC "to make available, so far as possible, to all the people of the United States, a rapid, efficient, nation-wide and world-wide wire and radio communication service with adequate facilities at reasonable charges."

Promoting this directive, the FCC said, was the 1996 Telecommunications Act which requires the FCC to prohibit, in certain cases, restrictions that impair reception.

The Rule forbids restriction of the following "protected" antennas:

(Note that Amateur Radio antennas are not protected.)

- DBS antennas that are one meter or less in diameter;
- Antennas for Multipoint Distribution Services (MDS), often called "Wireless Cable TV;"
- Instructional TV Fixed Services (ITFS), a type of MDS licensed to schools;
- Local Multipoint Distribution Services (LMDS) antennas that are one meter or less in diameter or diagonal measurement (LMDS is a new, broadband wireless cable, phone, and data service); and
- TV broadcast receiving antennas "on property within the exclusive use or control of an antenna user where the user has a direct or indirect ownership interest in the property" on which the antenna is located.

The FCC believes that a restriction impairs a "protected" antenna if it:

- Unreasonably delays or prevents installation, maintenance, or use;
- Unreasonably increases cost of installation, maintenance, or use; or
- Precludes reception of an acceptable quality signal.

There are exceptions. For example, there may be "valid safety or historic preservation" antenna restrictions, but even these:

- Must be as narrowly tailored as possible;
- Impose as little burden as possible; and
- Must be applied in a nondiscriminatory manner throughout a regulated area.

The FCC declared that the association's restriction and implementation are "prohibited and unenforceable" because they "create an outright prohibition of antennas covered by the Rules. Furthermore, there is nothing in the record to show that the prohibition is necessary for valid safety or historic preservation reasons."

Government to Turn VHF Spectrum Over to FCC for Probable Auctioning

The *National Telecommunications and Information Administration* (NTIA) has announced that effective January 1, 2002, the federal government will turn the 216-220 MHz band over to the FCC for assignment to the private sector.

That band contains the shared Amateur Radio band 219-220 MHz. We expect the FCC to auction licenses in the band to the highest bidder. It appears that hams will have to share the band with auction winners, unless the FCC were to reallocate the band exclusively to commercial purposes and remove the Amateur Service from the band.

The 216-220 MHz band is one of several federal bands that NTIA will reallocate. The other bands include 139-140.5 MHz; 141.5-143 MHz; 1385-1390 MHz; 1432-1435 MHz; and 2385-2390 MHz. All of these bands have significant Federal operations, especially defense operations.

NTIA manages the spectrum used by stations operated by the federal government, with final frequency assignment authority for these stations vested in the President.

The *Balanced Budget Act of 1997* requires the FCC and NTIA to find at least 120 MHz of spectrum below 3 GHz to be auctioned. Twenty MHz must come from federal government spectrum. That 20 MHz must be allocated to the federal government on a primary basis. Half of the reallocated 20 MHz can be reallocated to "mixed use," which means that some federal operations may remain in the spectrum, sharing with commercial operations.

The total Federal cost of reallocating 216-220 MHz and the other bands to the private sector -- including the costs of retuning, physical moves and replacement of equipment -- are estimated to exceed $1 billion. NTIA said that success of the reallocation plan depends on the availability of funds either from Congressional appropriations or reimbursement from the private sector.

NTIA said that "potential commercial applications" for 216-220 MHz include:

- Interactive Video and Data Services (originally intended for TV home shopping, the IVDS already is allocated 218-219 MHz and currently is a stalled service);
- Wireless Local Loop (fixed wireless phone service, especially in rural areas); and
- Wideband intercity packet data service. (This is the use currently permitted to the Amateur Service -- for noncommercial operation only -- in this band.)

NTIA found that the technical benefits of 216-220 MHz include:

- Effective radio wave propagation;
- Permits use of small antennas for hand-held radios;
- Inexpensive components available;
- Could be used as an expansion band for the adjacent 220-222 MHz private land mobile band.

Any new operations in this band will have to avoid interfering with the Navy's Space Surveillance System (SPASUR), on the air since 1959 and one of the biggest RF emitters on Earth.

SPASUR, known informally as "The Fence," detects air and space objects and forwards the data to the Naval Space Command. SPASUR consists of a 3000-mile line of transmitting and receiving stations that stretch across the southern U.S. from Georgia to California, with a central transmitter at Lake Kickapoo in northern Texas.

The 216.98 MHz SPASUR signal reaches 1000 miles off each coast and as thousands of miles into space. It can track objects at least one foot in size.

The Fence is not the only Federal use of 216-220 MHz. The band also is used for various low power applications such as earthquake sensor telemetry; firefighter and hazmat communications; wildlife tracking; and what the Justice Department mildly calls "audio collection devices" (eavesdropping bugs).

Impacts on Amateur Radio

Federal law requires the Commerce Secretary to "seek to avoid excessive disruption of existing use of Federal Government frequencies by Amateur Radio licensees." NTIA said, "amateurs have developed a reputation of being able to share effectively with Federal Government radio services, particularly radiolocation. This indicates that it may be possible for amateurs to share with other spectrum users."

"The 219-220 MHz band has been reallocated to the Amateur Radio Service on a secondary basis for wideband intercity packet radio services," NTIA continued. "In packet radio networks, the need to safeguard the traffic continuously from excessive co-channel interference is less demanding than in other types of communications systems. This ability to retransmit automatically errored data packets makes it extremely robust and enables it to overcome effectively many types of interference, therefore facilitating sharing with other radio services."

NTIA concluded that "By reallocating the 216-220 MHz band, there will be acceptable impact to the Amateur Radio Service and [amateur systems] will be able to continue to provide benefits to the public."